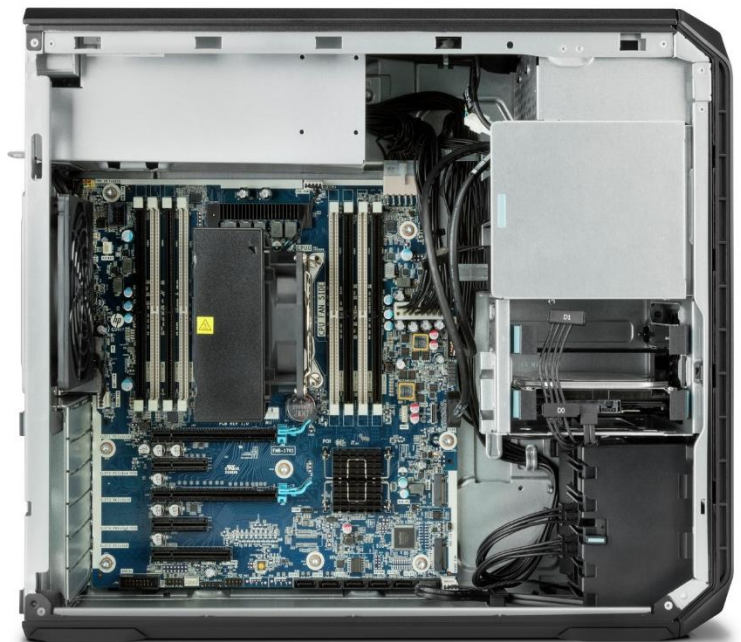




Avid Configuration Guidelines
HP Z4 G4 workstation
6 to 18 Core CPU System



1.) HP Z4 G4 AVID Qualified System Specification:

Z4 G4 Hardware Configuration

Supported Intel Xeon Scalable family (Skylake) CPU Choices

- Xeon W-2133 3.6 Ghz, turbo up to 3.9Ghz 6-core
- Xeon W-2135 3.7 Ghz, turbo up to 4.5Ghz 6-core (Good)
- Xeon W-2145 3.7 Ghz, turbo up to 4.5Ghz 8-core (Better)
- Xeon W-2155 3.3 Ghz, turbo up to 4.5Ghz 10-core
- Xeon W-2195 2.3 Ghz, turbo up to 4.3Ghz 18-core (Best performance)

Note – Higher CPU speeds are preferred over core count for MC application

Note: high power CPUs with high end graphics require the 750W power supply option

Supported Video Cards

- 1.) NVIDIA P1000 4GB PCI-e video board
- 2.) NVIDIA P2000 5GB PCI-e video board (recommended)
- 3.) NVIDIA P4000 8GB PCI-e video board
- 4.) AMD Radeon Pro WX7100 8GB PCI-e video board

System Disk Drive – 500 GB (recommended) SATA SSD. HP offers higher performing solid-state, NVMe, and SAS boot drive options which are acceptable. Recommend a HP qualified drive be selected.

Standard AVID memory configuration:

- Systems using the new Xeon W series Skylake CPU's will use DDR4-2666MHz memory (up to 8 DIMMs per system)
- Each CPU has 4 memory lanes - optimal bandwidth when all 4 memory lanes filled
 - 32GB (4 x 8GB) DDR4 2666MHz ECC memory – (Requires four 8GB DIMMs)

Memory modules must be installed according to manufacturer's requirements

Optional AVID memory configuration:

- 64GB (8 x 8GB) DDR4 2666 ECC memory – (Requires eight 8GB DIMMs)
- 64GB (4 x 16GB) DDR4 2666 ECC memory – (Requires four 16GB DIMMs)
- 128GB (8 x 16GB) DDR4 2666 ECC memory – (Requires eight 16GB DIMMs)

Memory configuration constraints

- No other memory configurations are formally supported in AVID environments.
- Un-balanced memory configurations which mix and match memory module sizes and locations will result in a poor performing, non-optimal operating environment.

2.) Qualified Operating Systems, Avid Client Editing Applications, Hardware and Shared-Storage support for the HP Z4 G4:

HP Supports:

- **Microsoft® Windows 10 Pro / Enterprise 64-bit Edition Version 1703 or 1709 – (MC 8.5 or above)**
- **Microsoft® Windows 10 Pro for workstations 64-bit Version 1709 – (MC 8.5 or above)**

Not Supported –

- **Microsoft® Windows 7 – any version**
- **Microsoft Windows 8 or 8.1 – any version**

Media Composer Application	Minimum Rev
Media Composer 8.x	8.8
Media Composer 7.x	Not supported
NewsCutter 11.x	Not Supported

* Nvidia P1000, P2000, P4000 require Nvidia driver that ships with the version of MC 8.8 and above

* AMD WX7100 require AMD driver released 17.Q4 or later

The required GPU files and installation instructions for AMD graphics can be found at the following Avid KB link:

http://avid.force.com/pkb/articles/en_US/download/AMD-Supported-GPU-Drivers

3.) Qualified O.S., Hardware and shared storage supported:

	Qualified / Supported
Nitris DX / Mojo DX	NOT SUPPORTED (requires PCIe gen 1 or 2 slot which is not available on this system)
Artist DNxIO/ DNxIQ (PCIe or thunderbolt connection) Artist DNxIV (thunderbolt only connection) – not shipping until 1H'18	Yes – Supported <u>PCIe Guidance</u> PCIe preferred as it requires less system over-head due to direct PCIe to PCIe connection between the host CPU and Artist DNxIO. <u>Thunderbolt Guidance</u> Thunderbolt 2 & 3 - higher system over-head, not recommended to share Thunderbolt devices on the same Thunderbolt bus with DNxIO, DNxIQ, DNxIV Support for HP Thunderbolt card will be first half 2018 DNxIO would require TB3 to TB2 converter Thunderbolt 3 offers support of cable lengths up to 60-meters (via qualified Corning Thunderbolt cables) for users needing to physically place the Artist DNxIO at longer distances from the host CPU Workstation.
3 rd Party Qualified Hardware	See release notes and Avid website for information regarding supported 3 rd party hardware (vendor qualified)
NEXIS / ISIS Single 1Gb Ethernet Client NEXIS Dual 1Gb Ethernet Client Intel i350, i219, i210	ISIS 5500 / 5000 , 7500 / 7000 NEXIS Pro, E2, E4, E5 V7.9
NEXIS / ISIS Hi-res (single 10Gbit) client Myricom Single-Port 10Gbit Atto FFRM-NS1, Intel X710	ISIS 5500 / 5000 , 7500 / 7000 NEXIS Pro, E2, E4, E5 V7.9
NEXIS / ISIS Ultra Hi-res (dual 10Gbit) Myricom Dual-Port 10Gbit Atto FFRM-NS2, Intel X710	ISIS 5500 / 5000 NEXIS Pro, E2, E4, E5 V7.9

4.) AVID qualified HBA info

AVID qualified HBA	AVID Part Number	Slot Location	Function
Avid Artist DNxIO HBA Avid Artist DNxIQ HBA	Avid part # 7030-30048-02 BMD PCIe cable kit	#4	Avid Artist DnxIO interface HBA Avid Artist DNxIQ interface HBA
HP Thunderbolt 3 adapter card	Not stocked by AVID	#2	TB3 not available until 1H'18
Atto R680, H680	Not stocked by AVID	#5	Local SAS Storage Support – Avid VideoRAID ST (5-bay) Xtore StudioRAID 5Ti
LSI 9200-8e SAS controller	7030-30036-01	#5	SAS Local Storage: Xtore StudioRAID 16Re (16-bay) chassis Xtore StudioRAID 5Te (5-bay) chassis
Vendor qualified 3 rd party hardware x8 PCI-E	Not stocked by AVID	#4 or #2	Vendor qualified 3 rd party hardware interface. See release notes and Avid website for information regarding supported 3 rd party hardware
Atto FFRM-NS11/NS12 10 Gb single or dual port	Not stocked by AVID	#3	Shared Storage: NEXIS Optical Gb-Ethernet
Intel i350-T2 – Dual Gb NIC	Not stocked by AVID	#3	Shared Storage: NEXIS Copper Gb-Ethernet Dual Gb NEXIS Connectivity
Intel X710 dual port 10Gb	Not stocked by AVID	#3	Shared Storage: NEXIS Optical Gb-Ethernet
Myricom 10G-PCIE-8B-S Myricom 10G-PCIE-8B2-2S	7030-30041-01	#3	Shared Storage: NEXIS 10Gb-Ethernet

Notes:

- Avid HIB part # 7030-30048-01 is no longer supported with DNxIO (use # 7030-30048-02 only)
- Avid artist DnxIQ requires BMD cable kit and PCIe card – Avid HIB card is NOT supported with DNxIQ
- HP thunderbolt 3 PCIe card will be supported in Z8 G4, Z6 G4 and G4 G4. For older HP workstations, use Thunderbolt 2 PCIe card from HP.

5.) Slot Configuration:

Slot Configuration Information			
Slot #	Electrical	Mechanical	
1	x16 PCI-E Gen 3	X16	Graphics Card: Nvidia P1000, P2000,P4000 AMD WX-7100
2	X4 PCI-E Gen 3	X4 open ended	HP Thunderbolt 3 adapter card (available 1H'18) Or 3 rd party PCIe OpenIO card
3	X16 PCI-E Gen 3	x16	Shared Storage Controllers Nexis/ISIS Intel X710, i350-T2 Atto FFRM-NS11/NS12 Myricom 10G-PCIE-8B-S
4	X4 PCI-E Gen 3	X4 open ended	Avid/BMD HIB card for DNxIO/DNxIQ Or 3 rd party PCIe Open IO card
5	X8 PCI-E Gen 3	X8 open ended	Local SAS Storage Controllers:
M 1	M.2 slot 1 PCI-E Gen 3	M.2 x4	HP nVMe storage cards
M 2	M.2 slot 2 PCI-E Gen 3	M.2 x4	HP nVMe storage cards
	Embedded Intel I219-LM Gb NIC	PCI-E x1 Gen 3	Qualified for Avid Nexis/ISIS
	Embedded Intel I210 Gb NIC	PCI-E x1 Gen 3	Qualified for Avid Nexis/ISIS

6.) Use of embedded NIC ports for Nexis/ISIS connectivity **Important Information**

The Z4 G4 has two embedded NIC ports. Both ports are qualified for Nexis

For proper operation and connectivity of the Intel network interface with NEXIS the following settings are required:

1. For the Intel NIC driver, under the performance settings, change the following parameters:

- Receive Buffers to 1024
- Transmit Buffers to 1024

2. Disable the windows firewall.

7.) **Required system BIOS settings for AVID environments:**

Use latest version from Vendor website

Please Note: CPU Hyper-threading should be enabled in all configurations. It is currently enabled by default by HP for shipping Z4 G4 systems

Z4 G4 Required system BIOS changes:

1. Verify CPU Processors are set to Hyper-Threading

Set Z4 G4 Required system BIOS changes:

- During boot up press F10 at the HP splash screen to invoke Set Up.
- Select the Performance tab
- Select Hyper-Threading
- Verify setting is Enabled (or enable if currently set to disable)

8.) **Graphics Qualified Drivers:**

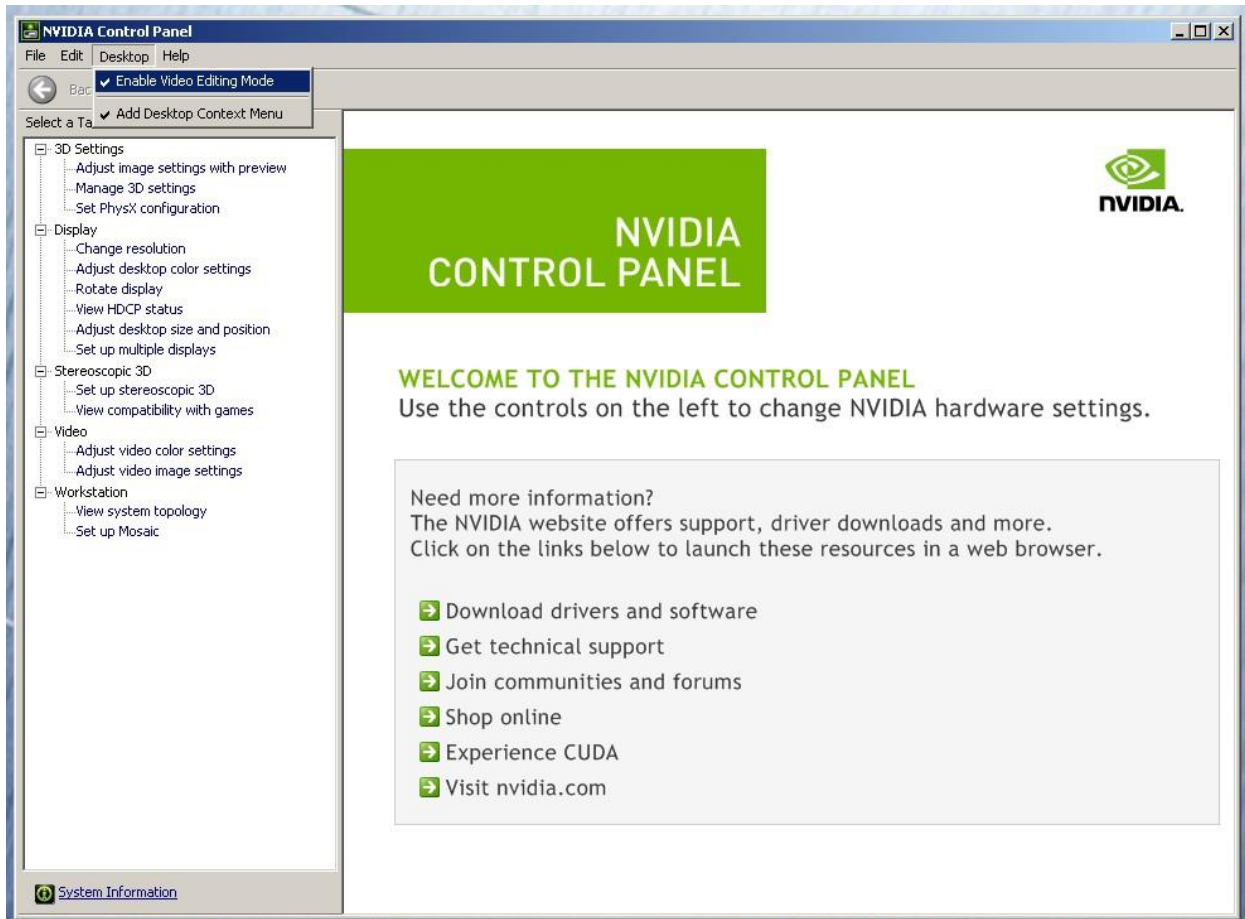
AVID Software	Version(s)	GPU	Driver Required
Media Composer	8.8.x	Nvidia P1000, P2000, P4000	Nvidia 385.08
Media Composer	8.8.x	AMD WX7100	AMD 17Q4

After installation of the AVID software the supported Nvidia driver can be found in the following directory:
Program Files / Avid / Utilities / Nvidia.

****** The AMD graphics driver is NOT included with MC release builds. You can find this driver on the AMD web page
<http://support.amd.com/en-us/download>

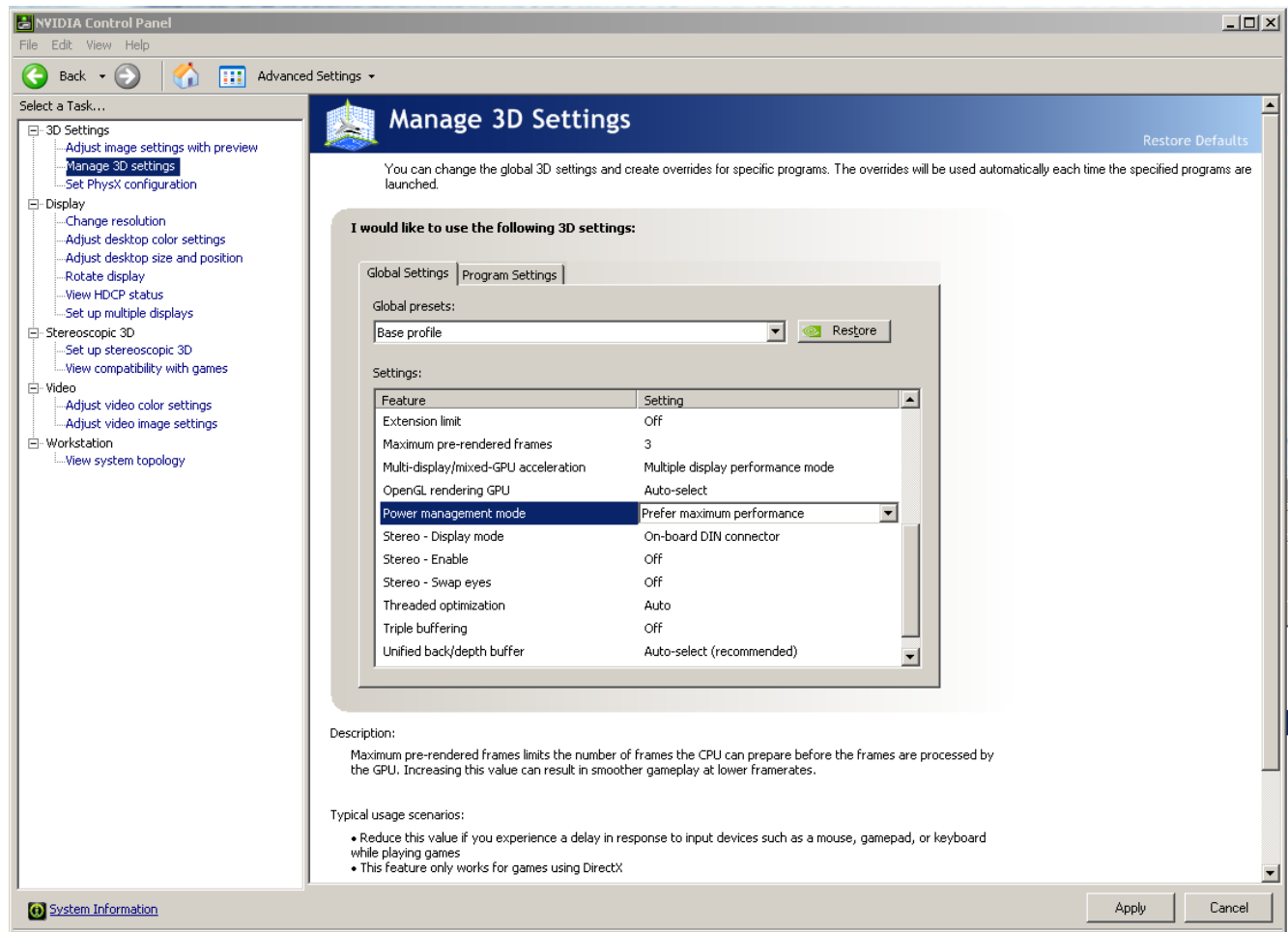
Set optimized Nvidia driver settings for Avid editing environments:

1. See picture below
2. Right-Click on the desktop and select Nvidia Control Panel
3. Select the “Desktop” menu selection in the control panel menu bar.
4. Enable “Desktop -> Video Editing Mode



5. Select Manage 3D Settings
6. Select “Global Settings” Tab
7. Under the “Global Settings” tab select “3D App – Default Global Settings” (Same as Base Profile)
8. Scroll down and locate the “Power Management Mode” feature. The default setting is “Adaoptimptive”

9. For the “Power management mode” feature, select “Prefer maximum performance” as shown in the picture below.



10. Depress the “Apply” button.

11. Nvidia driver optimization settings for Avid environments are complete.

E.) GPU monitor connectivity:

The Nvidia Quadro P4000, P2000 graphics cards have four Display-Port ports. The P1000 has 4 mini-display ports. All 4 ports can be used simultaneously.

The AMD WX7100 graphics card have four full size display ports.

(Important: Display-ports are not HDMI ports; at first glance they do look very similar to HDMI ports)

F.) Serial Port Deck Control

The HP Z4 G4 workstation does NOT have an embedded serial port. Primary or secondary / additional serial port deck control can be established via two methods (both of which have been qualified by Avid and will maintain frame accuracy in Avid environments)

1. Addenda model **RS-USB / 4** direct USB-to-RS422 serial adapter. This is a simple device which connects directly from a USB port to the RS422 port of a deck.
<http://www.addenda.com/addenda-elect/products/rsUSB4.php>
2. Combination of a Keyspan (Tripp-Lite) Model USA-19HS USB-to-serial-port adapter with Addenda Rosetta Stone model RS – 2/8 RS232-to-RS422 converter
 - Keyspan (Tripp-Lite) Model USA-19HS (AVID P/N 7080-20013-01)
<http://www.tripplite.com/en/products/model.cfm?txtSeriesID=518&EID=13384&txtModelID=3914>
 - Addenda Rosetta Stone (or equivalent) model RS – 2/8 RS232-to-RS422 converter (AVID P/N 7070-00507-01)
<http://www.addenda.com/addenda-elect/products/rs28.php>

To connect the Keyspan 19HS / Addenda RS -2/8 combination:

- Install the Keyspan 19HS driver before plugging the device into USB port.
- Once the Keyspan 19HS driver is installed then plug the Keyspan 19HS into a USB port.
- The Keyspan 19HS will now show up in device driver.
- Using a serial cable, connect the 9-pin serial port of the Keyspan 19HS USB adapter to the port of the Addenda marked RS232 from PC
- Using a 2nd serial port cable connect the port of the Addenda marked “RS422 to VTR” to the deck control serial port of the deck.

G.) O.S. setting recommendations for optimum performance with Avid Editing applications:

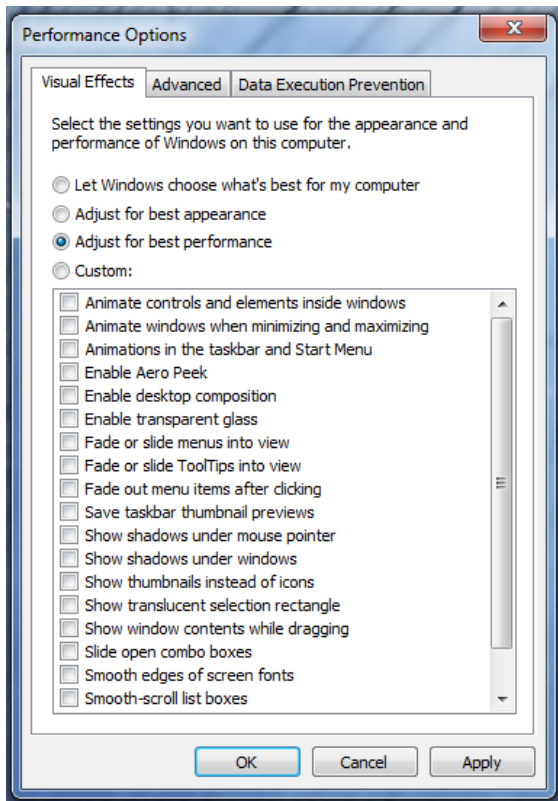
The following links provide O.S. setting suggestions for ensuring optimum performance when working with your Avid editing application with a Windows operating system.

- Optimizations for Video Editors - windows 10

http://avid.force.com/pkb/articles/en_US/Troubleshooting/Media-Composer-Windows-10-Optimizations-and-Troubleshooting

H.) Set Windows “Visual Effects” for “best performance”:

1. Right-Click on My Computer
2. Select Properties
3. On the left side of the menu, locate and select “Advanced system settings”
4. Under the “Advanced” tab depress the “Settings...” button for performance.
5. The “performance Options” window will be displayed.
6. Under the “Visual Effects” tab select the “Adjust for best performance” selection. (Picture below).



7. Depress the “Apply” button
8. Required Windows visual performance settings for Avid environments are now complete.

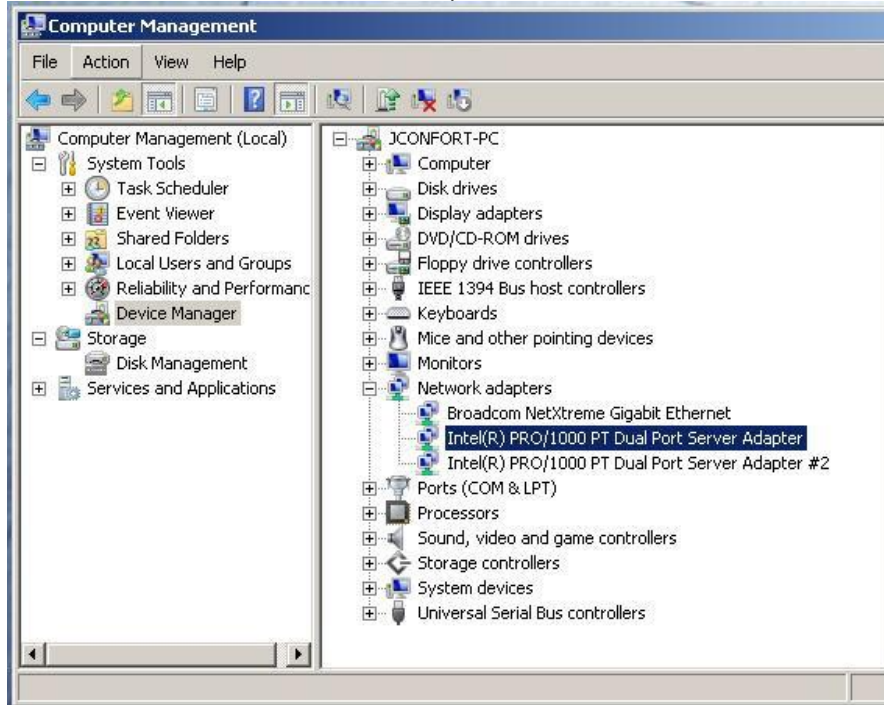
I.) Intel NIC Port(s) for NEXIS connectivity:

For proper operation and connectivity of any Intel NIC port used with NEXIS the settings below are required. Example below is for the Intel PRO 1000 PT.

1. For the performance settings, change the following parameters:
 - Receive Buffers to 1024
 - Transmit Buffers to 1024
2. Disable the windows firewall.

To set the Intel NIC Receive / Transmit buffers:

Go to device manager and select each instance of the network adapter device which will be used for NEXIS connectivity.

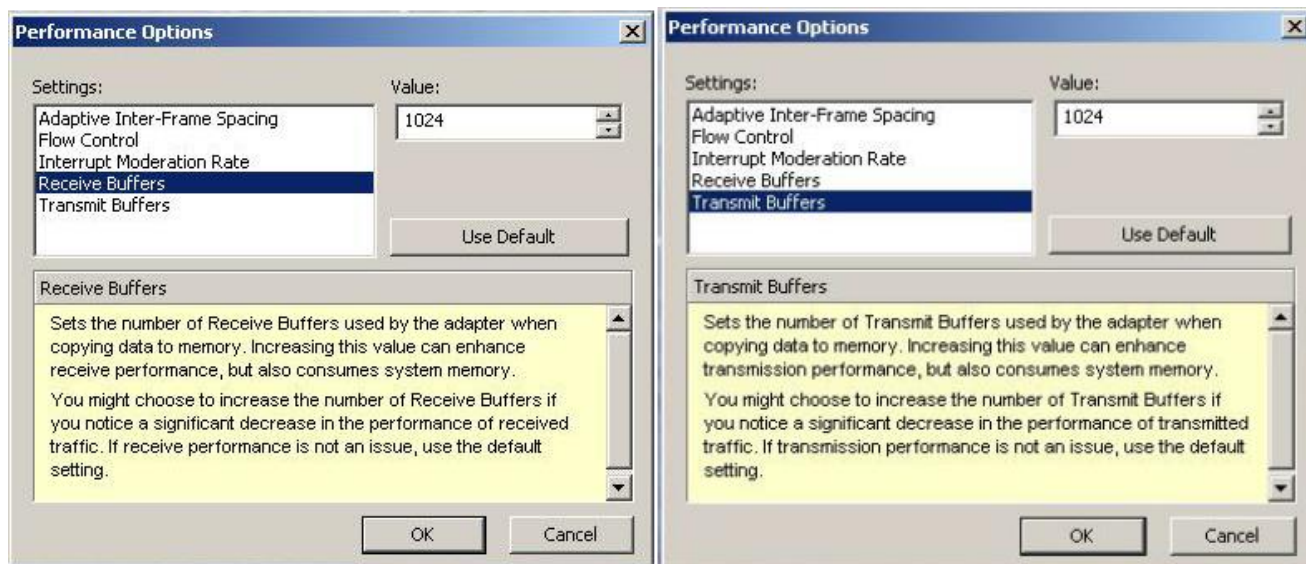


Select performance options and then select Properties.



Set Receive Buffers to 1024

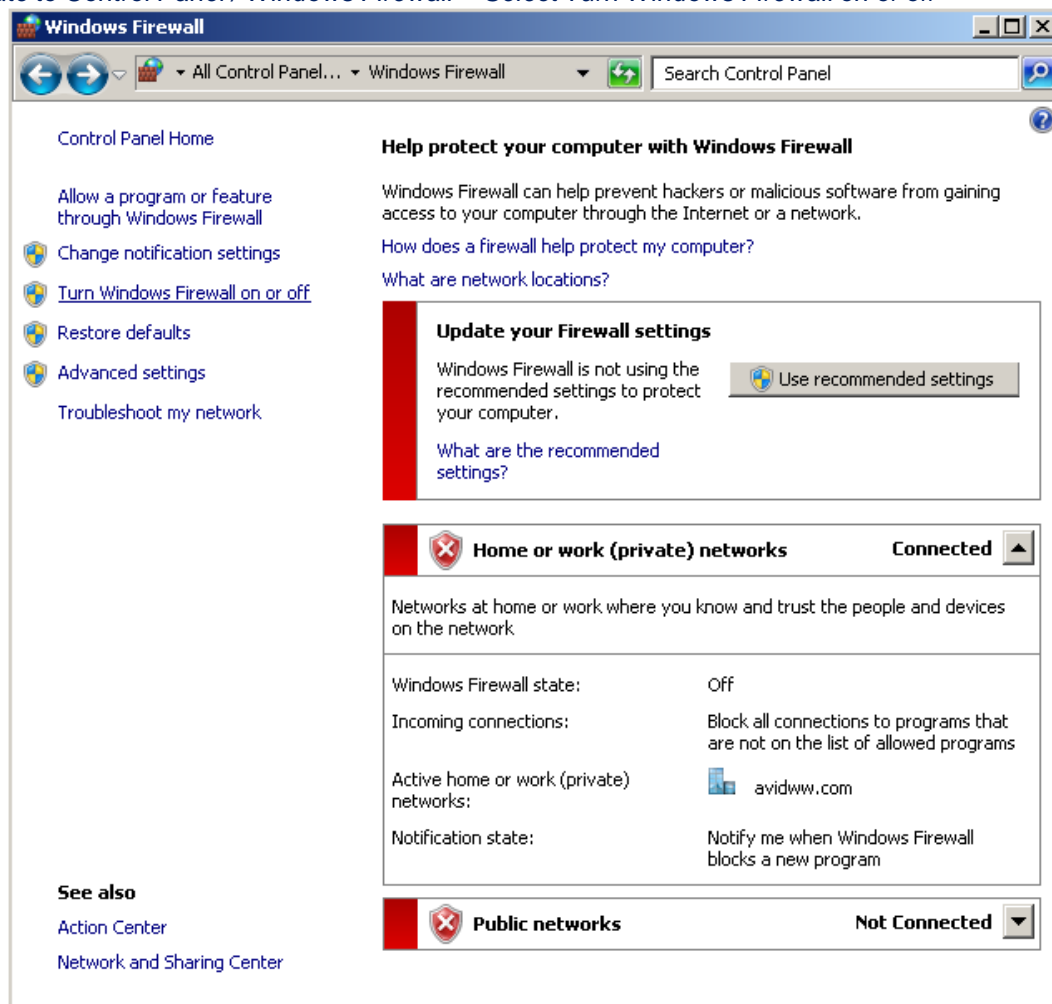
Set Transmit Buffers to 1024



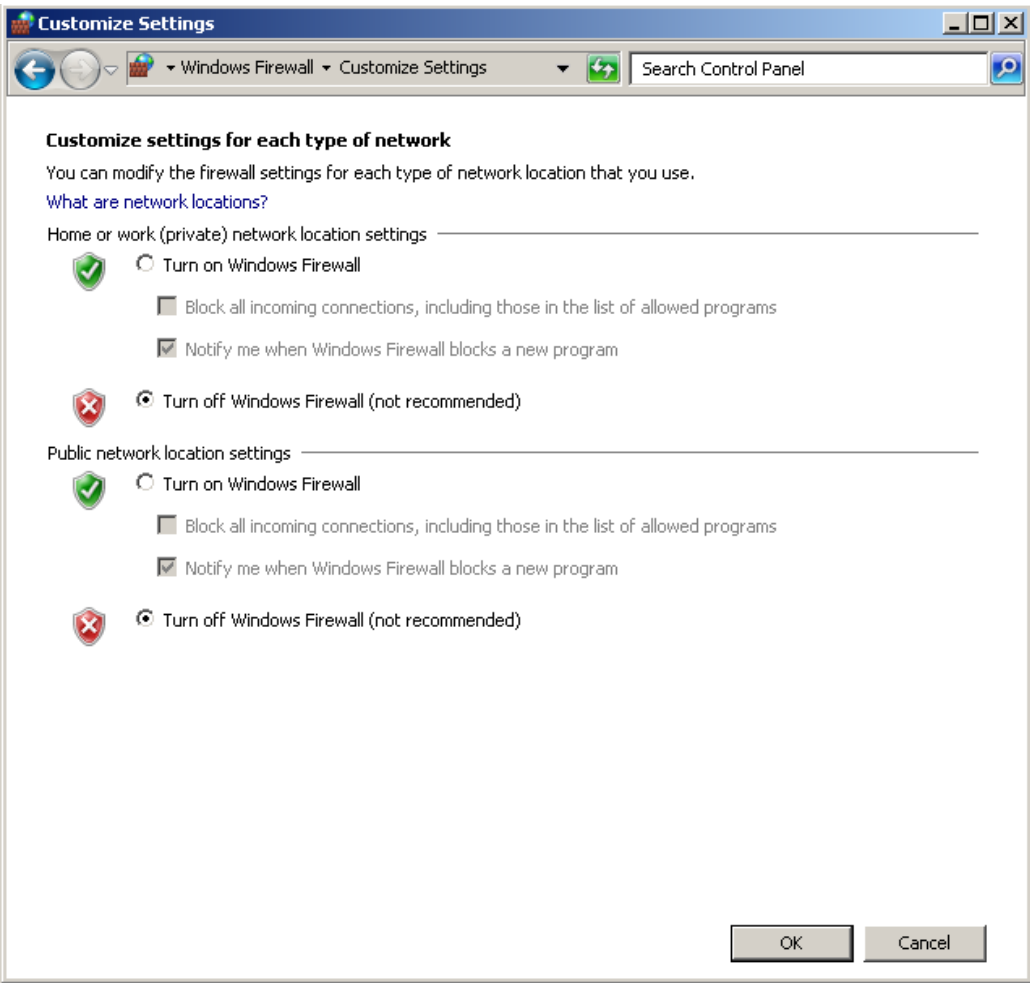
Perform this for each instance of and Intel NIC port which will be used for NEXIS connectivity.

J.) Disable the windows firewall:

Navigate to Control Panel / Windows Firewall -- Select Turn Windows Firewall on or off



Select Turn off windows firewall in both network locations, OK to save



Revision Update

Revision	Date	Name	Update
Rev A	Dec 22, 2017	Dave Pimm	Initial release of the HP Z4 G4 configuration guide
Rev B	Jan 30, 2018	Dave Pimm	Swapped PCIe slots for GPU
Rev C	Feb 20, 2018	Dave Pimm	Fixed small issues